FACIAL MORPHOLOGY ASSOCIATED WITH ISOLATED CLEFT PALATE

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This study aims to objectively describe facial morphology in patients with cleft palate (CP), using 3D surface imaging and advanced morphometrics.
In a prospective cohort study. , we recruited 39 children (6-12 years) with isolated CP, 8 patients with Robin Sequence (RS) and 51 control subjects.
All subjects underwent 3D facial surface imaging. In addition, the available lateral cephalograms and panoramic radiographs were reviewed. 3D facial morphology was compared between patients with CP and RS, and control subjects. Cephalometric SNA, SNB and ANB angles were measured on lateral cephalograms. Panoramic radiographs were checked for tooth agenesis.
Patients with isolated CP show a distinct facial phenotype, compared to control subjects. Both patients with CP and patients with RS show a retrusion of the chin, consistent with cephalometric measurements. Patients with RS show additional effects on the lateral sides of the face and in the forehead region. They also have a significantly higher prevalence of tooth agenesis.
Our results indicate that children with CP and RS show a retrusion of the chin as compared to controls, and this effect was more pronounced in the patients with RS. On top of this effect, patients with RS show additional facial characteristics, and can be delineated as a separate group. 3D facial imaging and morphometrics seems an excellent tool to describe subtle facial phenotypes and to differentiate between two different phenotypes, such as CP and RS.